

## Storm Data and Unusual Weather Phenomena - April 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>ILLINOIS, South</b>				
<b>JEFFERSON COUNTY --- 1.0 E SCHELLER [38.18, -89.08]</b>				
	04/10/13 15:16 CST		0	Funnel Cloud
	04/10/13 15:16 CST		0	Source: Trained Spotter
The funnel cloud was reported by a trained spotter who observed it from eastern Perry County.				
<b>JEFFERSON COUNTY --- DIX [38.43, -88.93]</b>				
	04/10/13 15:29 CST		5K	Hail (1.00 in)
	04/10/13 15:29 CST		0	Source: Trained Spotter
There was minor damage to vinyl siding and screens on the south side of a house.				
<b>JEFFERSON COUNTY --- 0.5 W WOODLAWN [38.33, -89.04]</b>				
	04/10/13 15:45 CST		0	Hail (1.50 in)
	04/10/13 15:45 CST		0	Source: Public
Ping pong ball size hail was reported.				
<b>JEFFERSON COUNTY --- 2.0 E BOYD [38.42, -88.98], DIX [38.43, -88.93]</b>				
	04/10/13 15:45 CST		10K	Hail (1.75 in)
	04/10/13 15:59 CST		0	Source: Trained Spotter
A second round of large hail associated with another supercell lasted approximately three to four minutes, causing more damage to vinyl siding and screens. The large hail swath extended from several miles southwest of Dix across the Dix area.				
<b>JEFFERSON COUNTY --- 2.0 SW BOYD [38.40, -89.05]</b>				
	04/10/13 15:56 CST		0	Funnel Cloud
	04/10/13 15:56 CST		0	Source: Trained Spotter
A strongly rotating funnel cloud was observed over open country.				
<b>JEFFERSON COUNTY --- 1.0 E DIX [38.43, -88.91]</b>				
	04/10/13 16:05 CST		0	Funnel Cloud
	04/10/13 16:05 CST		0	Source: Trained Spotter
A rotating wall cloud with a funnel cloud was observed crossing the road between Dix and Texico.				
Surface heating during the day destabilized the atmosphere, contributing to moderate instability in the warm sector of a surface cyclone. Thunderstorms developed as the cap weakened. Increasing vertical wind shear, moderate instability, and boundary layer dew points in the mid 60's resulted in a couple of supercells with funnel clouds and large hail. The two supercells moved northeast across the western and northern parts of Jefferson County.				

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*Photo of hailstone just under two inches in diameter. The photo was taken two miles west of Dix by the emergency management director for Jefferson County, Benton Fitzjerrells.*

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### EDWARDS COUNTY --- 3.0 N BONE GAP [38.49, -88.00]

04/16/13 19:58 CST	0	Hail (1.75 in)
04/16/13 19:58 CST	0	Source: Trained Spotter

Golf-ball size hail was reported by a trained spotter.

Scattered thunderstorms developed along and ahead of a cold front approaching the Ohio River. The activity was fostered by upper-level diffluence overlying a relatively warm moist boundary layer in the presence of 35 to 40 knots of west-southwesterly 700 mb flow.

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### (IL-Z084) JACKSON, (IL-Z088) UNION, (IL-Z092) ALEXANDER

04/18/13 04:00 CST	3K	Strong Wind (MAX 42 kt)
04/18/13 10:00 CST	0	

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### JACKSON COUNTY --- SAND RIDGE [37.73, -89.43]

04/18/13 12:42 CST	0	Funnel Cloud
04/18/13 12:42 CST	0	Source: Trained Spotter

A trained spotter reported a rain-wrapped funnel cloud.

Within the steadily destabilizing warm sector of a surface low, a quasi-linear band of thunderstorms proceeded eastward across southern Illinois in the afternoon. A few supercells developed in the presence of favorable deep-layer wind shear. At least one of these supercells produced a funnel cloud. Strong southerly winds occurred during the morning hours in the Mississippi River counties. A gust to 48 mph was measured at the Carbondale airport.

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### ALEXANDER COUNTY --- 2.3 ESE CAIRO [36.99, -89.14], 2.1 ESE CAIRO [36.98, -89.15], 1.1 ESE CAIRO [37.00, -89.16], 1.2 E CAIRO [37.00, -89.16]

04/19/13 14:00 CST	2K	Flood (due to Heavy Rain)
04/30/13 23:59 CST	0	Source: River/Stream Gage

Moderate flooding occurred along the Ohio River near Cairo, affecting low-lying fields, woods, and riverside parks. Boat ramps and river access roads were flooded. The river continued rising into early May.

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>ALEXANDER COUNTY --- THEBES [37.22, -89.47], 0.6 WSW THEBES JCT [37.20, -89.46], 0.3 WSW THEBES JCT [37.20, -89.45], 0.6 SE THEBES [37.21, -89.46]</b>				
	04/19/13 15:00 CST		2K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the Mississippi River near Thebes, affecting low-lying fields, woods, and riverside parks. Boat ramps and river access roads were flooded. The river continued rising into early May.				
<b>WABASH COUNTY --- 2.1 S PATTON [38.45, -87.75], 2.3 SSE PATTON [38.45, -87.74], 1.4 E MT CARMEL [38.42, -87.74], 1.0 ENE MT CARMEL [38.43, -87.75], 0.5 ESE ROCHESTER [38.35, -87.82], KEENSBURG [38.35, -87.87]</b>				
	04/20/13 00:00 CST		20K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the Wabash River around Mt. Carmel. The crest of 30.24 feet on April 28 was the 13th highest crest in records dating back to the late 1800's. Extensive flooding occurred on the northern outskirts of Mount Carmel. Numerous local river roads were flooded. In the City of Mt. Carmel, all local roads were flooded east of the levee except for one. Old Illinois 1 north of Mt. Carmel began to flood. Some residents along a street in the Mt. Carmel area and in the Keensburg area were forced to relocate. Over 100 acres of Beall Woods State Park were flooded. The flooding continued into early May.				
<b>WAYNE COUNTY --- WAYNE CITY [38.35, -88.58], 2.6 NNE MAYBERRY [38.31, -88.54], 3.5 S SIMS [38.32, -88.53], 1.0 E WAYNE CITY [38.35, -88.56]</b>				
	04/20/13 03:00 CST		0	Flood (due to Heavy Rain)
	04/21/13 05:00 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Skillet Fork River near Wayne City. Low-lying fields and woodlands were inundated.				
<b>PULASKI COUNTY --- OLMSTED [37.18, -89.08], 0.8 ESE OLMSTED [37.17, -89.07], 2.7 ESE LEVINGS [37.20, -89.03], 2.0 ESE LEVINGS [37.21, -89.03]</b>				
	04/20/13 15:00 CST		2K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Ohio River near Grand Chain, affecting low-lying fields, woods, and river access roads. The river continued rising into early May.				
<b>WHITE COUNTY --- MAUNIE [38.03, -88.05], 1.8 E MAUNIE [38.03, -88.02], 0.5 NNE RISING SUN [38.01, -88.03], 0.5 NNW RISING SUN [38.01, -88.03]</b>				
	04/21/13 14:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the Wabash River. Extensive flooding of low-lying fields and woodlands occurred. The river continued above flood stage into early May.				
<b>JACKSON COUNTY --- 2.6 WNW MT CARBON [37.76, -89.38], 1.4 W MT CARBON [37.75, -89.35], 1.4 WNW MT CARBON [37.76, -89.36], 2.2 WNW MT CARBON [37.76, -89.37]</b>				
	04/21/13 19:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Big Muddy River at Murphysboro. Some low-lying fields, woods, and parks were flooded. The flooding continued into early May.				
<b>MASSAC COUNTY --- BROOKPORT [37.12, -88.63], 3.0 ESE METROPOLIS [37.14, -88.68], 2.8 WNW BROOKPORT [37.13, -88.68], 0.2 SW BROOKPORT [37.12, -88.63]</b>				
	04/22/13 13:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Ohio River near Brookport, affecting low-lying fields, woods, and river access points. The river continued rising into early May.				
<b>WHITE COUNTY --- 2.1 SE CARMi [38.06, -88.15], 2.6 SE TRUMBULL [38.05, -88.20], 1.9 SE TRUMBULL [38.06, -88.20], 1.4 SE CARMi [38.06, -88.15]</b>				
	04/22/13 20:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Minor flooding occurred along the Little Wabash River at Carmi. Some county roads were inundated, along with low-lying fields and woodlands. The river continued rising into early May.				

**A couple of rounds of heavy rain in the Mississippi River Valley combined with melting snows from up north caused rises along the Mississippi River leading to major flooding. Backwater from the Mississippi River caused the Big Muddy River to rise above flood stage.**

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Other rounds of heavy rain fell in the Wabash and Ohio Valleys, causing minor flooding along the Wabash, Ohio, and many of their tributaries. April was one of the wettest months ever for the state of Indiana.

(IL-Z075) JEFFERSON, (IL-Z076) WAYNE, (IL-Z077) EDWARDS, (IL-Z078) WABASH, (IL-Z080) PERRY, (IL-Z081) FRANKLIN, (IL-Z082) HAMILTON, (IL-Z083) WHITE, (IL-Z084) JACKSON, (IL-Z085) WILLIAMSON, (IL-Z086) SALINE, (IL-Z087) GALLATIN, (IL-Z088) UNION, (IL-Z089) JOHNSON, (IL-Z090) POPE, (IL-Z091) HARDIN, (IL-Z092) ALEXANDER, (IL-Z093) PULASKI, (IL-Z094) MASSAC

04/20/13 01:00 CST	0	Frost/Freeze
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04/20/13 07:00 CST	0	
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Areas of frost and freezing temperatures occurred underneath a surface high pressure ridge that extended from the Great Lakes region south across the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost or freeze damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 30 to 36 degrees across southern Illinois.

(IL-Z076) WAYNE, (IL-Z077) EDWARDS, (IL-Z078) WABASH, (IL-Z081) FRANKLIN, (IL-Z082) HAMILTON, (IL-Z083) WHITE, (IL-Z084) JACKSON, (IL-Z085) WILLIAMSON, (IL-Z086) SALINE, (IL-Z087) GALLATIN, (IL-Z088) UNION, (IL-Z089) JOHNSON, (IL-Z090) POPE, (IL-Z091) HARDIN, (IL-Z092) ALEXANDER, (IL-Z093) PULASKI, (IL-Z094) MASSAC

04/25/13 02:00 CST	0	Frost/Freeze
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04/25/13 06:00 CST	0	
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Areas of frost occurred underneath a surface high pressure ridge that extended from the southern Plains northeast to the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 32 to 36 degrees across most of southern Illinois. Warmer readings were observed in the Mount Vernon area and points west.

(IL-Z075) JEFFERSON, (IL-Z076) WAYNE, (IL-Z077) EDWARDS, (IL-Z078) WABASH, (IL-Z080) PERRY, (IL-Z081) FRANKLIN, (IL-Z082) HAMILTON, (IL-Z083) WHITE, (IL-Z084) JACKSON, (IL-Z085) WILLIAMSON, (IL-Z086) SALINE, (IL-Z087) GALLATIN, (IL-Z088) UNION, (IL-Z089) JOHNSON, (IL-Z090) POPE, (IL-Z091) HARDIN, (IL-Z092) ALEXANDER, (IL-Z093) PULASKI, (IL-Z094) MASSAC

04/29/13 01:00 CST	0	Dense Fog
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04/29/13 07:00 CST	0	
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Areas of dense fog formed due to the combination of clearing skies and light winds near a surface high over the Tennessee Valley. Due to recent rains, there was plenty of moisture at ground level. Visibility was occasionally one-quarter mile or less across southern Illinois.

### INDIANA, Southwest

GIBSON COUNTY --- JOHNSON [38.28, -87.75], OWENSVILLE [38.27, -87.68]

04/16/13 18:20 CST	0	Hail (1.00 in)
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04/16/13 18:23 CST	0	Source: Trained Spotter
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Quarter size hail was reported in Johnson and Owensville.

GIBSON COUNTY --- 0.5 S PRINCETON [38.34, -87.57], PRINCETON [38.35, -87.57]

04/16/13 18:40 CST	0	Hail (1.00 in)
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04/16/13 18:42 CST	0	Source: Trained Spotter
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Quarter size hail was reported on the south side of town. In the downtown area, penny size hail was reported.

Scattered thunderstorms developed along and ahead of a cold front approaching the Ohio River. The activity was fostered by upper-level diffluence overlying a relatively warm moist boundary layer in the presence of 35 to 40 knots of west-southwesterly 700 mb flow. Isolated storms produced large hail.

PIKE COUNTY --- PETERSBURG [38.50, -87.28], 1.3 WNW PETERSBURG [38.51, -87.30], 3.8 NE PETERSBURG [38.54, -87.23], 4.7 NE PETERSBURG [38.54, -87.21]

04/19/13 05:00 EST	10K	Flood (due to Heavy Rain)
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04/30/13 23:59 EST	0	Source: River/Stream Gage
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Moderate flooding occurred along the White River around Petersburg. Extensive flooding was in progress, with several bottomland roads flooded in Pike County. Some of these roads were under several feet of water. Flooded roads east of State Route 57 included County Roads 750N, 600N, and 1000E. Pike County roads flooded west of State Route 57 included 250W, 400W, 675N, 700N, 1000W, 900W, 700W, and 775W. Several small oil fields were inaccessible. High water isolated some river cabin residents. The flooding continued into early May.

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<b>GIBSON COUNTY --- 0.9 NNW HAZLETON [38.49, -87.54], 1.7 NNE HAZLETON [38.50, -87.52], 1.5 WSW GIRO [38.49, -87.50], 1.3 ENE HAZLETON [38.49, -87.51], 2.5 WNW PATOKA [38.43, -87.63], 3.9 ENE EAST MT CARMEL [38.43, -87.67]</b>				
	04/19/13 11:00 CST		10K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the White River in the Hazleton area. Numerous county roads were flooded. There was extensive flooding of lowlands across northern Gibson County. Some river cabin residents evacuated. Most local roads were flooded. Several oil fields were inaccessible. A six-inch water pump was installed in Hazleton to keep water off the streets. Flood gates were installed at Hazleton. The flooding continued into early May.				
<b>GIBSON COUNTY --- 1.6 WSW EAST MT CARMEL [38.39, -87.76], 1.0 NW EAST MT CARMEL [38.41, -87.74], 1.9 NE EAST MT CARMEL [38.42, -87.70], 2.4 S EAST MT CARMEL [38.37, -87.74], 1.9 SSW CAROL [38.30, -87.78], 2.7 N CRAWLEYVILLE [38.32, -87.83]</b>				
	04/20/13 00:00 CST		20K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the Wabash River around East Mt. Carmel. The crest of 30.24 feet on April 28 was the 13th highest crest in records dating back to the late 1800's. Extensive flooding took place in East Mt. Carmel, Indiana and western Gibson County. The road through East Mount Carmel was impassable. Most structures in this area are elevated 2 to 3 feet above the flood crest recorded during this flood. However, some evacuations were needed. Vehicles were moved to higher ground. Numerous county roads were closed by flooding. The flooding continued into early May.				
<b>POSEY COUNTY --- 0.5 WNW NEW HARMONY [38.13, -87.94], 1.0 NNE NEW HARMONY [38.14, -87.92], 0.9 NE NEW HARMONY [38.14, -87.92], 1.8 S NEW HARMONY [38.10, -87.93], 2.0 SW NEW HARMONY [38.11, -87.95]</b>				
	04/21/13 14:00 CST		10K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Moderate flooding occurred along the Wabash River. Low-lying fields and woodlands were underwater. Parts of northern New Harmony began to flood, and sandbagging became necessary in town. Harmonie State Park was closed. The river continued above flood stage into early May.				
<b>Record rainfall occurred in west central and north central sections of Indiana, causing moderate flooding along the Wabash and White Rivers.</b>				
<b>(IN-Z081) GIBSON, (IN-Z082) PIKE, (IN-Z085) POSEY, (IN-Z086) VANDERBURGH, (IN-Z087) WARRICK, (IN-Z088) SPENCER</b>				
	04/20/13 02:00 CST		0	Frost/Freeze
	04/20/13 07:00 CST		0	
Areas of frost occurred underneath a surface high pressure ridge that extended from the Great Lakes region south across the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 33 to 38 degrees across southwest Indiana.				
<b>(IN-Z081) GIBSON, (IN-Z082) PIKE, (IN-Z085) POSEY, (IN-Z086) VANDERBURGH, (IN-Z087) WARRICK, (IN-Z088) SPENCER</b>				
	04/25/13 02:00 CST		0	Frost/Freeze
	04/25/13 06:00 CST		0	
Areas of frost occurred underneath a surface high pressure ridge that extended from the southern Plains northeast to the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost damage likely occurred to unprotected potted plants and nursery stock. Low temperatures were in the mid 30's across southwest Indiana.				
<b>KENTUCKY, Southwest</b>				
<b>CALLOWAY COUNTY --- MURRAY [36.62, -88.32]</b>				
	04/11/13 09:00 CST		0	Heavy Rain
	04/11/13 12:00 CST		0	Source: Emergency Manager
Minor flooding problems were observed in the Murray area. Standing water was over many roads, causing traffic hazards. The Kentucky mesonet site at Murray measured a daily rainfall total of 2.98 inches.				
<b>Locally heavy rain occurred ahead of a cold front that extended from central Illinois southward across western Tennessee.</b>				
<b>MCCRACKEN COUNTY --- 0.5 S PADUCAH [37.07, -88.63]</b>				

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	04/16/13 15:36 CST		0	Hail (0.75 in)
	04/16/13 15:36 CST		0	Source: Trained Spotter
Dime size hail was reported on the south end of town.				
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HENDERSON COUNTY --- HENDERSON [37.83, -87.58]	04/16/13 16:10 CST		0	Hail (0.88 in)
	04/16/13 16:10 CST		0	Source: Trained Spotter
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HENDERSON COUNTY --- HENDERSON [37.83, -87.58], 0.5 E HENDERSON [37.83, -87.57]	04/16/13 16:16 CST		0	Hail (1.00 in)
	04/16/13 16:17 CST		0	Source: Emergency Manager
Quarter size hail was reported in the city. Dime size hail was reported on the east side of town.				
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HENDERSON COUNTY --- SPOTTSVILLE [37.85, -87.42]	04/16/13 16:29 CST		0	Hail (1.00 in)
	04/16/13 16:29 CST		0	Source: Trained Spotter
Dime and quarter size hail was reported falling in the community.				
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HENDERSON COUNTY --- 3.2 NNE CORAVILLE [37.77, -87.44]	04/16/13 16:33 CST		0	Hail (1.00 in)
	04/16/13 16:33 CST		0	Source: Trained Spotter
Quarter size hail was reported on the Audubon Parkway eight miles east of Henderson.				
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WEBSTER COUNTY --- DIXON [37.52, -87.70]	04/16/13 17:31 CST		0	Hail (0.75 in)
	04/16/13 17:31 CST		0	Source: Trained Spotter
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CHRISTIAN COUNTY --- HOPKINSVILLE [36.85, -87.48]	04/16/13 19:50 CST		0	Hail (0.75 in)
	04/16/13 19:50 CST		0	Source: Trained Spotter
Dime size hail was reported along the bypass.				
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CHRISTIAN COUNTY --- HOPKINSVILLE [36.85, -87.48]	04/16/13 20:04 CST		0	Hail (1.00 in)
	04/16/13 20:09 CST		0	Source: Trained Spotter
Quarter size hail was reported in the downtown area.				
Scattered thunderstorms developed along and ahead of a cold front approaching the Ohio River. The activity was fostered by upper-level diffluence overlying a relatively warm moist boundary layer in the presence of 35 to 40 knots of west-southwesterly 700 mb flow. A few of the storms produced large hail.				
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GRAVES COUNTY --- 4.0 ESE WATER VLY [36.55, -88.73], 0.5 W PILOT OAK [36.55, -88.73]	04/18/13 19:24 CST		10K	Tornado (EF0, L: 0.33 mi , W: 100 yd)
	04/18/13 19:25 CST		0	Source: NWS Storm Survey
The weak tornado briefly touched down, removing a few shingles from two homes. One home had soffit damage. A couple large branches were blown down. Peak winds were estimated near 75 mph. The average path width was about 100 yards.				
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GRAVES COUNTY --- 4.3 SW SEDALIA [36.61, -88.65], 2.0 W SEDALIA [36.65, -88.64]	04/18/13 19:31 CST		3K	Tornado (EF0, L: 3.17 mi , W: 100 yd)
	04/18/13 19:35 CST		0	Source: NWS Storm Survey
Several large branches were blown down. The average damage path width was 100 yards and the peak winds were 75 mph.				
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CALLOWAY COUNTY --- 1.3 SW BACKUSBURG [36.69, -88.49]				

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	04/18/13 19:50 CST		5K	Thunderstorm Wind (EG 52 kt)
	04/18/13 19:50 CST		0	Source: Trained Spotter

Downed trees were reported along Highway 1124 along the Graves County line.

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<b>GRAVES COUNTY --- 4.3 S SYMSONIA [36.86, -88.52], 2.5 E KALER [36.87, -88.49]</b>				
	04/18/13 19:54 CST		35K	Tornado (EF0, L: 2.21 mi , W: 150 yd)
	04/18/13 19:57 CST		0	Source: NWS Storm Survey

There was shingle and soffit damage to several homes. Several trees were snapped, and large branches were blown down. The average damage path width was 150 yards, and the peak winds were about 80 mph. The tornado moved into Marshall County near the community of Oak Level.

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<b>MARSHALL COUNTY --- 0.9 WNW OAK LEVEL [36.87, -88.49], 1.0 NNE OAK LEVEL [36.88, -88.46]</b>				
	04/18/13 19:57 CST		8K	Tornado (EF0, L: 1.39 mi , W: 150 yd)
	04/18/13 19:59 CST		0	Source: NWS Storm Survey

The tornado continued from Graves County into Marshall County. There was shingle and soffit damage to a few homes. Several trees were snapped, and large branches were blown down. The average damage path width was 150 yards, and the peak winds were about 80 mph.

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<b>MARSHALL COUNTY --- SHARPE [36.97, -88.45], CALVERT CITY [37.03, -88.35]</b>				
	04/18/13 20:00 CST		4K	Thunderstorm Wind (EG 52 kt)
	04/18/13 20:00 CST		0	Source: Trained Spotter

A couple of trees were blown down along Kentucky Highway 95 in Calvert City. A trained spotter estimated a wind gust to 60 mph near Sharpe.

Small, low-topped thunderstorm line segments moved northeast in a region of strong vertical wind shear and very weak instability. These line segments produced a few short-track, weak tornadoes and isolated wind damage. The tornadoes formed from mesovortices embedded within the line. There was little if any lightning associated with the convection. The storms occurred along a cold front that extended southward from a low pressure center in northern Illinois.

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<b>(KY-Z001) FULTON, (KY-Z002) HICKMAN, (KY-Z003) CARLISLE, (KY-Z004) BALLARD, (KY-Z005) MCCrackEN, (KY-Z006) GRAVES, (KY-Z007) LIVINGSTON, (KY-Z008) MARSHALL, (KY-Z009) CALLOWAY, (KY-Z010) CRITTENDEN, (KY-Z011) LYON, (KY-Z012) TRIGG, (KY-Z013) CALDWELL, (KY-Z014) UNION, (KY-Z015) WEBSTER, (KY-Z016) HOPKINS, (KY-Z017) CHRISTIAN, (KY-Z018) HENDERSON, (KY-Z019) DAVIESS, (KY-Z020) MCLEAN, (KY-Z021) MUHLENBERG, (KY-Z022) TODD</b>				
	04/20/13 01:00 CST		0	Frost/Freeze
	04/20/13 07:00 CST		0	

Areas of frost and freezing temperatures occurred underneath a surface high pressure ridge that extended from the Great Lakes region south across the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost or freeze damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 30 to 37 degrees across western Kentucky.

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<b>(KY-Z001) FULTON, (KY-Z002) HICKMAN, (KY-Z003) CARLISLE, (KY-Z004) BALLARD, (KY-Z005) MCCrackEN, (KY-Z006) GRAVES, (KY-Z007) LIVINGSTON, (KY-Z008) MARSHALL, (KY-Z009) CALLOWAY, (KY-Z010) CRITTENDEN, (KY-Z011) LYON, (KY-Z012) TRIGG, (KY-Z013) CALDWELL, (KY-Z014) UNION, (KY-Z015) WEBSTER, (KY-Z016) HOPKINS, (KY-Z017) CHRISTIAN, (KY-Z018) HENDERSON, (KY-Z019) DAVIESS, (KY-Z020) MCLEAN, (KY-Z021) MUHLENBERG, (KY-Z022) TODD</b>				
	04/25/13 00:00 CST		0	Frost/Freeze
	04/25/13 07:00 CST		0	

Areas of frost and freezing temperatures occurred underneath a surface high pressure ridge that extended from the southern Plains northeast to the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost or freeze damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 29 to 35 degrees across western Kentucky.

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<b>CALLOWAY COUNTY --- MIDWAY [36.55, -88.32], 0.9 ESE MIDWAY [36.55, -88.30], 2.0 E MIDWAY [36.55, -88.28], 1.0 NE MIDWAY [36.56, -88.31]</b>				
	04/27/13 07:00 CST		0	Flood (due to Heavy Rain)
	04/27/13 10:00 CST		0	Source: Trained Spotter

Kentucky Highway 1828 was closed due to flooding. A trained spotter in the area measured 1.40 inches of rain in about 24 hours.

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<b>CALLOWAY COUNTY --- ALMO [36.70, -88.27], 1.0 W TAYLORS STORE [36.53, -88.44], 4.7 S HAMLIN [36.53, -88.07], 2.4 E FAXON [36.68, -88.11]</b>				
	04/27/13 17:31 CST		0	Flash Flood (due to Heavy Rain)
	04/27/13 23:00 CST		0	Source: Law Enforcement

## Storm Data and Unusual Weather Phenomena - April 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
Several county roads were closed by flooding. Water was over numerous other roadways. Highway 121 just south of New Concord was flooded and dangerous. Radar estimated that 3 to 5 inches of rain fell during the previous 24 hours.				
<b>TODD COUNTY --- 1.5 W HERMAN [36.73, -87.20], 1.3 SE HERMAN [36.72, -87.15], 1.1 ESE GUTHRIE [36.64, -87.15], 1.8 W GUTHRIE [36.65, -87.20], 2.1 ENE SOUTH ZION [36.69, -87.25]</b>				
	04/27/13 18:47 CST		40K	Flash Flood (due to Heavy Rain)
	04/27/13 23:00 CST		0	Source: Trained Spotter

Flash flooding occurred in the downtown area of Guthrie. Streets in Guthrie were closed due to high water on them. Some of the streets were not known to flood in the past. Basements of several homes and a couple of businesses were flooded. Water up to 8 inches deep was reported over a 500-yard stretch of U.S. Highway 41 between Trenton and Guthrie. Highway 181 in southern Todd County had up to a foot of water over it in some spots. Up to a foot of water was reported over a couple of other roads. Radar estimated that 3 to 5 inches of rain had fallen over southern Todd County in 24 hours.

<b>MARSHALL COUNTY --- HARDIN [36.77, -88.30]</b>				
	04/27/13 21:28 CST		0	Heavy Rain
	04/27/13 21:28 CST		0	Source: Trained Spotter

The 36-hour rainfall total was 4.25 inches.

**Along and north of a slow-moving warm front over western Tennessee, clusters of moderate to heavy rain occurred. These clusters moved eastward across southern Kentucky, where the ground was saturated. Southwest low-level flow on the order of 20 to 30 knots overran the surface warm front. The air mass south of the warm front was characterized by precipitable water values of 1.2 to 1.5 inches. The persistent nature of the very moist southwest flow overrunning the warm front resulted in very heavy convective rainfall along the Tennessee border, mainly from Murray eastward.**

<b>MUHLENBERG COUNTY --- PARADISE [37.27, -86.98], 0.8 SSE PARADISE [37.26, -86.97], 0.8 S PARADISE [37.26, -86.98], 0.6 NW PARADISE [37.28, -86.99]</b>				
	04/29/13 07:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage

Minor flooding occurred along the Green River at Paradise. Some low-lying fields and woodlands were underwater. The river continued rising into early May.

**A couple rounds of heavy rain fell in western and central Kentucky late in the month, causing minor flooding along the Green River.**

### MISSOURI, Southeast

<b>RIPLEY COUNTY --- 2.0 WNW PAYNOR [36.53, -90.95], 1.1 ENE PAYNOR [36.53, -90.90]</b>				
	04/10/13 19:06 CST		0.35M	Thunderstorm Wind (EG 87 kt)
	04/10/13 19:08 CST		0	Source: NWS Storm Survey

Approximately 200 trees were blown down. One barn was destroyed, with debris blown into trees. Four vehicles and a tractor that were in the barn were damaged. A home sustained shingle damage and other minor damage. One calf was killed and another injured. The damage was caused by a microburst with peak winds near 100 mph. The damage swath was one-half mile wide by 1 and 3/4 miles long.

<b>RIPLEY COUNTY --- 2.0 NNW PULASKI [36.65, -90.76]</b>				
	04/10/13 19:24 CST		5K	Thunderstorm Wind (EG 52 kt)
	04/10/13 19:24 CST		0	Source: Trained Spotter

Several tree branches were blown down along U.S. Highway 160 east of Doniphan.

<b>BUTLER COUNTY --- POPLAR BLUFF [36.75, -90.40]</b>				
	04/10/13 19:53 CST		0	Thunderstorm Wind (EG 52 kt)
	04/10/13 19:53 CST		0	Source: Emergency Manager

Emergency management personnel estimated the wind gusted near 60 mph.

<b>BUTLER COUNTY --- 6.0 SE POPLAR BLUFF [36.69, -90.32], 3.0 W BATESVILLE [36.71, -90.30]</b>				
	04/10/13 19:58 CST		20K	Tornado (EF0, L: 1.73 mi , W: 75 yd)
	04/10/13 20:00 CST		0	Source: NWS Storm Survey



## Storm Data and Unusual Weather Phenomena - April 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
The roofs and some walls of two sheds/barns were removed and blown several hundred yards. The rafters were also removed. The average damage path width was 50 yards. Peak winds were estimated near 85 mph.				

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<b>BUTLER COUNTY --- 3.0 WSW BATESVILLE [36.68, -90.30], 6.0 E POPLAR BLUFF [36.75, -90.29]</b>				
	04/10/13 19:59 CST		25K	Thunderstorm Wind (EG 65 kt)
	04/10/13 20:02 CST		0	Source: NWS Storm Survey

Straight-line wind damage occurred just east of the path of a weak tornado. A small trailer was overturned, roofing was blown off a shed, and shingles were blown off a home.

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<b>STODDARD COUNTY --- 5.1 W DUDLEY [36.79, -90.19], 2.0 NNE PUXICO [36.98, -90.17]</b>				
	04/10/13 20:00 CST		0.30M	Thunderstorm Wind (EG 70 kt)
	04/10/13 20:20 CST		0	Source: NWS Storm Survey

Scattered damage consisted of uprooted trees and broken tree limbs. Dozens of homes sustained loss of shingles or other minor damage. A barn was levelled. Numerous sheds were damaged or destroyed. A business in Puxico lost its roof. Windows were blown out, and a tree was snapped in half in Puxico. The damage path width was four miles. Peak winds were estimated near 80 mph.

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<b>STODDARD COUNTY --- 2.0 NW DUDLEY [36.80, -90.13], 2.0 N DUDLEY [36.81, -90.10]</b>				
	04/10/13 20:05 CST		40K	Tornado (EF0, L: 1.53 mi , W: 50 yd)
	04/10/13 20:07 CST		0	Source: NWS Storm Survey

The tornado removed metal roofing and damaged rafters of at least four chicken houses. The debris was carried up to a mile or more. The average damage path width was about 40 yards. Peak winds were approximately 75 mph.

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<b>BOLLINGER COUNTY --- ZALMA [37.15, -90.08], 2.0 NE ZALMA [37.17, -90.05]</b>				
	04/10/13 20:25 CST		50K	Thunderstorm Wind (EG 70 kt)
	04/10/13 20:28 CST		0	Source: NWS Storm Survey

Trees were uprooted, and tree limbs were broken. Homes lost shingles. Barns and sheds were damaged. A large tree was uprooted on Highway 51 about a mile north of Zalma.

**Surface heating during the day destabilized the atmosphere, contributing to moderate instability in the warm sector of a surface cyclone. Thunderstorms developed as the cap weakened. Increasing vertical wind shear, moderate instability, and boundary layer dew points in the mid 60's resulted in a squall line with embedded bowing segments and isolated tornadoes. A few swaths of significant wind damage and a couple of weak tornadoes were reported.**

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<b>CARTER COUNTY --- ELLSINORE [36.93, -90.75]</b>				
	04/16/13 16:13 CST		0	Hail (0.75 in)
	04/16/13 16:13 CST		0	Source: Trained Spotter

Scattered thunderstorms developed along and ahead of a cold front approaching the Ozark Mountain foothills. The activity was fostered by upper-level diffluence overlying a relatively warm moist boundary layer in the presence of 35 to 40 knots of west-southwesterly 700 mb flow.

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<b>(MO-Z087) CAPE GIRARDEAU, (MO-Z111) SCOTT</b>				
	04/18/13 08:00 CST		2K	Strong Wind (MAX 40 kt)
	04/18/13 14:00 CST		0	

During the mid-morning hours, strong southerly winds developed ahead of a cold front that extended southward from a low pressure center in northern Illinois. The strongest winds were in the Mississippi River counties. A wind gust to 46 mph was measured at the Cape Girardeau airport. The winds decreased late in the afternoon following the passage of thunderstorms.

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<b>CAPE GIRARDEAU COUNTY --- 1.4 SSE CAPE GIRARDEAU [37.28, -89.52], 1.0 NNE DUTCHTOWN [37.26, -89.66], 0.6 NE BLOMEYER [37.24, -89.66], 1.4 ESE GULF JCT [37.26, -89.53]</b>				
	04/19/13 09:00 CST		50K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage

Major flooding occurred along the Mississippi River in the Cape Girardeau area. The river crested at Cape Girardeau very near 42 feet, which is the threshold for major flooding. Many homes in the Cape Girardeau area were affected, and evacuations were required. Over 100,000 acres were flooded. Numerous roads were closed. Most of the affected houses were in rural areas of Cape Girardeau County along tributary creeks that were swollen by Mississippi River backwater. The city of Cape Girardeau is protected by floodwalls and levees. The community of Dutchtown, located along a diversion channel, was threatened by backwater flooding. Volunteers at a staging area filled about 7,000 sandbags to construct a temporary levee on Highway 74 to protect Dutchtown. Dutchtown was flooded severely in the historic flood of 2011. The Mississippi River flooding continued into early May.

## Storm Data and Unusual Weather Phenomena - April 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>SCOTT COUNTY --- COMMERCE [37.15, -89.45], 0.8 ENE COMMERCE [37.15, -89.44], 4.0 ESE WASATCH [37.10, -89.41], 2.7 SE WASATCH [37.11, -89.43]</b>				
	04/19/13 18:00 CST		20K	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
Major flooding occurred along the Mississippi River. There was extensive flooding of low-lying fields, and many county roads were closed. The flooding continued into May.				
<b>MISSISSIPPI COUNTY --- DORENA [36.58, -89.23], 1.9 WSW DORENA [36.57, -89.26], 3.6 WNW DORENA [36.60, -89.29], 3.3 WNW DORENA [36.60, -89.28]</b>				
	04/22/13 08:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: Department of Highways
Minor to moderate flooding occurred along the Mississippi River. There was extensive flooding of low-lying fields, and county roads were closed. The Dorena-Hickman Ferry was closed due to high water over the landing at Hickman, Kentucky. The ferry connects Highway 1354 at Hickman, Kentucky with Missouri Route A and Route 77 near Dorena, Missouri. The flooding continued into May.				
<b>NEW MADRID COUNTY --- 1.9 SSE NEW MADRID [36.57, -89.52], 3.8 SE NEW MADRID [36.57, -89.48], 3.5 ESE NEW MADRID [36.59, -89.47], 1.6 SE NEW MADRID [36.58, -89.51]</b>				
	04/24/13 09:00 CST		0	Flood (due to Heavy Rain)
	04/30/13 23:59 CST		0	Source: River/Stream Gage
The Mississippi River rose above flood stage in the New Madrid area. Bottomland fields were flooded. The river continued rising into early May.				
<b>A couple of rounds of heavy rain in the Mississippi River Valley combined with melting snows from up north caused rises along the Mississippi River, leading to major flooding. The Governor of Missouri declared a state of emergency in response to the flooding, activating the Missouri National Guard and the U.S. Army Corps of Engineers. The rise in river levels was especially dramatic considering low water levels threatened to shut down commercial barge traffic earlier in the year.</b>				
<b>(MO-Z076) PERRY, (MO-Z086) BOLLINGER, (MO-Z087) CAPE GIRARDEAU, (MO-Z100) WAYNE, (MO-Z107) CARTER, (MO-Z108) RIPLEY, (MO-Z109) BUTLER, (MO-Z110) STODDARD, (MO-Z111) SCOTT, (MO-Z112) MISSISSIPPI, (MO-Z114) NEW MADRID</b>				
	04/20/13 01:00 CST		0	Frost/Freeze
	04/20/13 07:00 CST		0	
Areas of frost and freezing temperatures occurred underneath a surface high pressure ridge that extended from the Great Lakes region south across the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost or freeze damage likely occurred to unprotected potted plants and nursery stock. Low temperatures ranged from 31 to 37 degrees across southeast Missouri.				
<b>(MO-Z076) PERRY, (MO-Z086) BOLLINGER, (MO-Z087) CAPE GIRARDEAU, (MO-Z100) WAYNE, (MO-Z107) CARTER, (MO-Z108) RIPLEY, (MO-Z109) BUTLER, (MO-Z110) STODDARD, (MO-Z111) SCOTT, (MO-Z112) MISSISSIPPI, (MO-Z114) NEW MADRID</b>				
	04/25/13 03:00 CST		0	Frost/Freeze
	04/25/13 06:00 CST		0	
Areas of frost occurred underneath a surface high pressure ridge that extended from the southern Plains northeast to the Lower Ohio Valley. Most crops had not yet been planted due to excessively wet soil and cool temperatures. However, some frost damage likely occurred to unprotected potted plants and nursery stock. Low temperatures were in the mid 30's across southeast Missouri.				
<b>(MO-Z076) PERRY, (MO-Z086) BOLLINGER, (MO-Z087) CAPE GIRARDEAU, (MO-Z100) WAYNE, (MO-Z107) CARTER, (MO-Z108) RIPLEY, (MO-Z109) BUTLER, (MO-Z110) STODDARD, (MO-Z111) SCOTT, (MO-Z112) MISSISSIPPI, (MO-Z114) NEW MADRID</b>				
	04/29/13 02:00 CST		0	Dense Fog
	04/29/13 07:00 CST		0	
Areas of dense fog formed due to the combination of clearing skies and light winds near a surface high over the Tennessee Valley. Due to recent rains, there was plenty of moisture at ground level. Visibility was occasionally one-quarter mile or less across southeast Missouri.				